



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE ENGINEER AND PUBLIC SERVICE

As the progress of the world, the comforts of man and his ability to produce, are so very largely due to the work of the engineer, his work is of the very greatest importance; he therefore naturally interests himself also in the public welfare in behalf of which he should "be ready to apply his special knowledge, skill and training for the use and benefit of mankind," and with loyalty to his country, evidence of which was shown in the recent War, which, to a greater extent than ever before, was dependent on the skill of the engineer.

In connection with testimony by engineers in legal cases, a clause in one of the engineering codes says: "To render reports or testimony intended to deceive is highly unprofessional," a maxim which contrasts with the guiding principle of some lawyers: "Win the case; win it honestly if you can, but win it."

The engineer's work is often connected with some form of public service and he is therefore concerned with the public and with public welfare. His obligations to serve the public conscientiously to the best of his abilities are thereby instilled into him; his natural repugnance to act against the interest of the public, or of those in his charge, when urged to do so by his less scrupu-

lous superior officer, perhaps a politician, a contractor or a financier, has cost many an engineer his position.

Untiring efforts are made by those of experience in the profession to advance the standards of education and training of the rising generation of engineers in the schools and colleges; the subject is frequently discussed at the sessions of the American Institute of Electrical Engineers between those who know what is needed in actual practice and those who do the teaching and training; both willingly coöperate to the great advantage of the student.

Any special recruiting for the profession of electrical engineering seems hardly necessary, as the great interest taken by many young men in this branch of engineering seems to be sufficient.

An employment service is conducted by the Institute; in general, any form of service pertaining to electrical engineering, either to its members, the profession, the public, or the government, which is of such a nature that it can best be done by this large national organization, including in its membership all the leading electrical engineers of the country and many in foreign countries, is willingly undertaken and intelligently carried out. In many instances, the Institute has set an example to others.

Procedure in Developing Ethical Standards Adopted by the American Association of Engineers

By H. W. CLAUSEN

Treasurer of the American Association of Engineers; Chairman, Practice Committee, American Association of Engineers

THE maintenance of the proper ethical relations of the professional engineer both with the public and with his fellow engineers is becoming of great importance in the effort to

develop the service of the engineer to its maximum of usefulness. Clearly, one of the essentials to a constructive and vigorous policy leading to the harmonious coöperation of all concerned,

is a definite standard or code of ethics, adherence to which can be relied upon to build up the mutual confidence vital to successful professional service under the complex conditions existing today.

The necessity for a comprehensive code of ethics has been quite generally recognized by the leading engineers of the country and much has already been accomplished in crystallizing professional opinion in regard to the many phases of the subject. A significant forward step has been made by a group of engineers in the formation of the American Association of Engineers. Although many reasons prompted the creation of this association, it may be said that the desire on the part of its organizers for definite machinery capable of adequately and promptly handling the various problems relating to the ethics of the engineering profession was the principal thought in mind. Effective bodies have long been in existence to deal with the technical side of engineering service and in the course of their work much has also been done to advance the standard of practice from an ethical standpoint as well. It was thought, however, that the establishment of the American Association of Engineers would be helpful in providing a means for determining a general code of ethics and in interpreting that code in specific problems of everyday practice; and that, further, it would provide a prompt means of taking disciplinary action in the enforcement of penalties for violations of the standards set up to govern practice, wherever such action would be in the interest of the public welfare.

REASONS FOR A WRITTEN CODE

It may be said with some justification that the standards of good citizenship and of honest dealing form a sufficiently exact body of principles for the great majority of the engineering pro-

fession, and that for such men as make up this majority anything further is superfluous and unnecessary. Certainly engineers, although belonging to what is commonly felt to be one of the newer professions, have demonstrated and are now showing as high a conception of honorable and upright public service as any of the older professional groups. But the acceptance of a practical code of ethics by the members of a profession is a declaration of their faith for all the world to know and there are times when recourse to this written standard would serve as a helpful guide, as does the chart to the navigator.

This is especially true of the younger men in the profession who are naturally students of precedent and who are anxious to guide their practice in strict conformance with established principles. Moreover, it would be untrue to say that there are no departures from the highest ethical standards on the part of engineers. Here and there are examples of deliberate unprofessional conduct injurious to the public welfare and to the engineering profession. Disciplinary action in such cases would, if properly taken, do much to raise the profession of engineering in the public mind and would react favorably upon those engineers whose practice is founded upon truth, honesty and duty.

An army without the necessary discipline thoroughly to control its members often suffers immeasurably from the action or lack of action, as the case may be, of a few irresponsible individuals whose conceptions of duty are warped by selfishness and whose aims are remote from those dictated by the principles of service to a higher cause.

The first step in the work of the American Association of Engineers, then, was the development of a written code of ethics, a statute, as it were, which would be generally regarded as correct

and enforceable. With a view to making the first draft of this code a clear-cut unequivocal statement of high principles, the responsibility for writing it was placed upon an individual. Isham Randolph, now deceased, an engineer of outstanding character and integrity, was selected and he wrote the code which is printed in full on page 277. It has attracted wide attention and favorable comment as being an assembly of principles recognizing the importance of enlightened self-interest on the part of the individual engineer and yet broadly emphasizing the responsibility of the engineer to his client and the public.

It is an exceedingly difficult task to draw up a code which will in a single document provide adequate expression for the ideals of the profession and at the same time set forth detailed rules of conduct. It seemed necessary, therefore, for the Association to appoint a Practice Committee, the duty of which is to interpret the code of ethics for every-day use. This interpretation is done by the consideration of particular cases and problems in a broad and general manner, with names, locations, etc., omitted, and decisions are then arrived at, based upon the specific facts given. The decisions of this Practice Committee are next referred to the National Board of Directors as recommendations. If approved, they are published and act as precedents for professional conduct under similar circumstances. These decisions may be roughly compared to court decisions in common law.

To provide for any appeals which may be made from Practice Committee decisions, a judiciary committee will be formed which will have disciplinary power for the enforcing of penalties upon violators of the code of ethics or of decisions of the Practice Committee.

As an example of the problems con-

sidered by the Practice Committee the following cases which have been passed upon and approved may be of interest:

Case 15

A firm of engineers by name of A, located at B in state C, advertise and sell their services as consulting engineers. They are also manufacturers' representatives for several of the largest manufacturers in the United States. Among others they act as consulting engineers for the city of B and on work which they recommend and on which they write specifications. They also give prices to contractors and bid on the machinery.

Question.—Is it ethical for A to sell their services as consulting engineers to the city of B and also, acting in the capacity of sales engineers or manufacturers' representatives, to furnish prices on the commodities that they sell to contractors bidding on the work of city B when A makes a recommendation of award?

Answer.—Generally, no. There might be a peculiar combination of circumstances where this might be correct, but never should it be undertaken without the fullest of publicity and then only in cases where the public interest demands it.

Question.—In the above, would the situation be altered if A made a direct bid to city B for the required commodities or machinery?

Answer.—Generally, no. Exception under conditions mentioned above.

Question.—As a general policy is it ethical for engineers to design work or write specifications for clients and also have an interest, direct or indirect, in the materials, equipment or other things going into the construction work of the clients?

Answer.—As a general policy it is not ethical for engineers to have an interest direct or indirect in the materials, equipment, etc. going into the construction work of their clients except that the clients be advised in advance of the nature of the interest of the engineer and sanction of the client be obtained.

Case 16

A is engineer for a county and receives his pay in fees for the design and supervision of engineering structures let by the county under contract to builders. Another engineer, B, proposes an alternate solution for one of A's problems, engineer B to receive his compensation from the builder who submits B's plan as an alternate. The statutes of the state provide for this method. The compensation for A is the same whichever plan is used, and the alternate structure must ultimately have the approval of A.

Question.—Is it unprofessional or unethical for engineer B to propose an alternate solution through a bidder?

Answer.—No.

In the above question, suppose engineer A opposes the alternate plan and charges B with unethical practice.

Question.—If the practice is held to be ethical, then is engineer A unprofessional when he charges engineer B with unprofessional practice?

Answer.—Yes, if B's proposition is made in good faith for the public benefit; however, A should not be considered unethical for an honest expression of opinion, so long as it was courteously stated.

Engineer A and engineer B each prepare alternate plans for contractors to submit bid at a letting. The owner then employs engineer C to determine which of the two is the better solution. Engineer C condemns both and seeks employment to redesign the structure himself, thus eliminating both of the engineers, A and B.

Question.—Is the practice of engineer C ethical?

Answer.—It is a question of intent. If A's and B's plans were faulty or unduly expensive to build, it would be the duty of C to so report. He should, however, not seek the work for himself. In the event that the owner desires C's services, it would not be unethical for C to undertake the work, preferably having A and B satisfied as to his conduct in the matter.

The report of the Practice Committee of the American Association of Engineers made at the last annual convention in 1921 brings out interesting points concerning the actual method of procedure.

Cases coming before the Practice Committee seem readily to fall into two general classes. The first class includes those of a general character involving questions of ethics and professional practices concerning which there is no dispute as to the facts but only as to whether the acts or practices in any given case are in accordance with the adopted code of ethics of our profession and society. In a certain sense, the decisions of the Practice Committee as approved by the Board of Directors in such cases, becomes the common law in engineering practice, the same as the decisions of our civil courts do in every-day life. These decisions are subject to change from time to time as engineering opinion becomes more and more crystallized resulting from experience and investigation. They are of prime importance because they are written and can be referred to from time to time.

The second class comprises those cases concerning which there is no agreement as to the facts but on the contrary a decided disagreement as to same. Naturally from such a state of affairs a controversy can develop which may be far-reaching as to its effects on the welfare of individual engineers, the profession, and the good will of the public. Such cases usually involve considerable personal feeling and unless properly decided will result in great injury.

Cases of the second class require careful handling and should not be decided except after a thorough examination of all facts and circumstances surrounding the controversy. In some of these controversies an investigation or open hearing should be held to which all parties interested in the controversy, including the witnesses, should be invited to attend. Plaintiff and defendant should each have a counsel or aid which should be an engineer, not an attorney, and the proceedings should be carried on according to the legal rules of evidence and written record of such rules. Obviously

the reason for this is only to bring out clearly the facts and reduce the written record of the court reporter to a minimum. All witnesses whose testimony is to be considered competent should be required to submit to voluntary oath. It should be the duty of the Chairman of the Practice Committee, or if he is unable to serve, another member of this committee designated by him, to conduct such a hearing and in regular course of routine to render a written decision setting forth the charges made, the facts brought out, and the findings.

The appeal from such a decision should not, in the opinion of your Chairman, be to the Board of Directors. The size of the Board and requirements of time and attendance in person at the meetings make it practically impossible to acquaint the Board members with all the evidence in detail. Such a body, already busy with matters of the highest importance as regards our association, would necessarily as a matter of routine have to approve a decision made by the Chairman of the Practice Committee because they, in the very nature of things, could not each and all have the intimate acquaintance with the facts necessary to insure an independent decision.

In the opinion of your Chairman, the appeal from the decision of the Practice Committee in cases of this character should be to a higher tribunal, known as the Judicial Committee, to consist of not more than three members qualified and appointed as recommended by your Committee on Revision of the Constitution. This committee should have the power to enforce its own decisions and those of the Practice Committee by the expulsion of the transgressing member without recourse to a higher authority. Such a court would insure a proper and thorough consideration of all the facts in any given case and its work would react to the benefit of the profession as a whole.

Last year, attention was called to the desirability of giving particular attention to the engineer in public service. Evidently because of insufficient publicity our members are not familiar with the resolutions passed by the last convention relative to the

proper conduct of an engineer in public service when confronted with conditions not conducive to the public welfare. At least only one case was brought to the attention of National Headquarters, which was disposed of promptly. Engineers in public service hold a tremendous potentiality for good or evil practice so far as public welfare is concerned. If the collective conscience of engineers would only grasp the opportunity for real public service, some considerable progress in public esteem and confidence would result to the profession generally and worthy engineers individually. To do this the profession must clean house and our society should be the leader in showing the way. Wherever opportunity affords, a member, guilty of accepting a public engineering position of responsibility without possessing the requisite experience, knowledge, skill or ability to properly fulfill the office, should be advised thereof and show cause why a resignation would not be in order. Similarly, when there is evidence that such a position has been given to the recipient because of his willingness to "take orders" from unscrupulous politicians contrary to sound public policy.

The great city of Chicago and state of Illinois are not controlled by the same faction of a political party. The public press publishes reports concerning the gradual undermining and abolition of efficient engineering departments and bureaus and the replacement thereof with political henchmen, resulting in a great loss to the public and injury to old, experienced and efficient engineering employees. In the interest of the individual engineers injured by this process, the profession generally and the public good, the truth or falsity of such charges should be verified and therefore the following resolution is offered for your consideration:

Resolved, That the various chapters of the American Association of Engineers in the state of Illinois, independently or collectively as they may elect, investigate in a thorough and painstaking manner the status of the practice of engineering in that state and political subdivision thereof. The Board of Directors are instructed to afford assistance and guidance if requested by

the various chapters and the various chapters are required to make progress reports each three months to the Board of Directors so that a full and comprehensive report will be ready for the next annual convention for its consideration. The President is directed to use the influence of his office to the end that such investigation is promptly begun and diligently prosecuted and results of such investigation given proper publicity for the common interest of the profession and public.

During the year six formal cases, Nos. 13, 14, 15, 16, 17 and 19, were considered by your committee and approved by the Board of Directors and published in the *Professional Engineer* in accordance with our Constitution and By-Laws. Case No. 18 was handled by your Chairman alone and

finally disposed of by your Board, but as yet has not been published. Besides the above a considerable number of cases, not of general interest, were handled by your Chairman informally.

Obviously the problem facing the Association is a large one, and its work is beset with difficulties of many kinds. The danger of injustice to individuals is ever present, but the guiding principle of service, honest service based upon truth, can, in the hands of farsighted forceful men, be relied upon to lead on to a better understanding and to a sound conception of the duty of the engineer whether in public or in private practice.

Shall Corporations Be Authorized to Practise Engineering?

By WILLIAM J. WILGUS

Consulting Engineer, New York City

SHOULD a corporation practise engineering? The layman will perhaps at first thought reply in the affirmative, always with the provision, however, that the engineering service so rendered conforms with the best professional standards of practice; and yet the question is by no means so easily answered when considered from all sides and especially from the point of view of public expediency.

Is it not generally recognized that a corporation is organized and administered primarily for gain? We are not here speaking of that class of corporations which serve a philanthropic or charitable cause, but of the every-day business corporation, aggressively "on the make" as it were, and reaching out vigorously to increase its power and earning capacity. All such corporations of this latter class as are ably administered, strive to perform some

economically useful service. Those wholly or partly engaged in engineering doubtless endeavor to furnish their clients or customers with engineering advice and skill consistent with the highest standards of the engineering profession. But considering the very nature of the corporation, is it possible to accomplish this purpose?

May we not draw this comparison between the purposes of a corporation and those of a profession? On the one hand, a profession is commonly regarded as, and may be defined as, a vocation having to do with the instructing, guiding and advising of others, or with serving them in some art, calling, vocation, or employment within the limitations not only of law but also of rules or standards known as a code of ethics. On the other hand, a typical engineering corporation is organized, and its work carried on, for the purpose